ENGINEERING GEOLOGIC INVESTIGATION
PROPOSED SUBDIVISION
APN 527-27-047
14915 SHANNON ROAD
LOS GATOS, CALIFORNIA

Prepared for

Mr. Bud Elam
14915 Shannon Road
Los Gatos, California

February 2021

STEVEN F. CONNELLY, C.E.G.

Consulting in
Engineering Geology

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

February 5, 2021
Project #2104

Mr. Bud Elam
14915 Shannon Road
Los Gatos, CA 95032

Subject: **ENGINEERING GEOLOGIC INVESTIGATION**
Proposed Subdivision
APN 537-27-047
14915 Shannon Road
Los Gatos, California

Dear Mr. Elam,

At your request, I have prepared this Engineering Geologic Investigation for the proposed subdivision of your property, APN 537-27-047, located at 14915 Shannon Road in Los Gatos, California. I understand that you intend to subdivide the property into 10 lots and construct new residences on the property, as approximately shown on Figure 7, Site Geologic Map. The accompanying report presents my findings regarding the geologic conditions and potential geologic hazards influencing the proposed development.

I am pleased to have been of service to you on this project. Please contact me if you have any questions regarding this report.

Very truly yours,

Steven F. Connelly
Certified Engineering Geologist 1607

CERTIFIED ENGINEERING GEOLOGIST
Steven F. Connelly
C.E.G. # 1607
STATE OF CALIFORNIA

Copies: 7 - Addressee
1 - Milstone Geotechnical

1169 Avenida Benito, San Jose, CA 95131 www.stevenfconnelly.com Phone (408) 392-9999 Cell (408) 398-9339

ENGINEERING GEOLOGIC INVESTIGATION
PROPOSED SUBDIVISON
APN 527-27-047
14915 SHANNON ROAD
LOS GATOS, CALIFORNIA

This report presents the results of an Engineering Geologic Investigation for the proposed subdivision of the property, APN 527-27-047, located at 14915 Shannon Road in Los Gatos, California (see Figure 1, Site Location Map). The property will be subdivided into 10 new lots intended for construction of new homes, as approximately shown on Figure 7, Site Geologic Map.

The property is located within hillside terrain susceptible to potential landsliding. The active Shannon fault also passes through the southeast margin of the property, as approximately shown on Figure 7. The Town of Los Gatos consequently requires engineering geologic investigation to assess geologic, seismic, and landslide hazards to the project.

The purpose of this Engineering Geologic Investigation is to identify existing geologic conditions and potential geologic, fault, landslide, or seismic hazards on the subject site, and to provide appropriate recommendations for the proposed subdivision. The scope of this investigation included review of pertinent geologic maps and literature; review of previous nearby investigations; communications with Mr. Craig Stewart of Cotton Shires and Associates, Inc., the Reviewing Geologists for the Town of Los Gatos; consultation with the project Geotechnical Engineer, Mr. Barry Milstone of Milstone Geotechnical; analysis of historical aerial photographs; a site reconnaissance and mapping; excavation and logging of eleven test pits on the site; engineering geologic analysis; drafting and preparation of this report.

This report has been prepared for the exclusive use of Mr. Bud Elam, and project architects and engineers for the proposed new construction. This investigation has been conducted in accordance with generally accepted engineering geology principles and practices. No other warranty, either expressed or implied, is made. In the event that any changes in the nature or location of the improvements are planned, the conclusions and recommendations of this report shall not be considered valid unless such changes are reviewed, and the conclusions and recommendations of this report are modified or verified in writing by Certified Engineering Geologist 1607.

Photo 1: 2019 aerial photograph showing the subject property.

Site Conditions

The subject property is situated within the Los Gatos foothills along the northeast flank of the northwest-trending Santa Cruz Mountain Range, as shown on Figure 2, Regional Topographic Map. The property is an irregularly-shaped 27-acre parcel located along the northeast side of Shannon Road, as shown on Photo 1 above. Sky Lane crosses the northwest corner of the property and provides access to the upper, northeast corner of the site.

The property is located on the southwest flank of a prominent northwest-trending ridgeline. The southwest portion of the property is level to gently inclined, as shown on Figure 19, Geologic Cross-Sections. A steep hillslope, inclined up to 30 degrees, is located to the northeast. Several southwest-inclined drainage swales are located on the hillslope. A broad hilltop area is located at the northeast corner of the property.

An existing residence, detached garage, and barn are located on the lower portion of the property adjacent to Shannon Road. A few dirt roads are graded across the middle and upper margin of the site. The property is vegetated by grass, scattered oak trees, and fruit trees.

Geology

Bailey and Everhart (1964) initially mapped geology and fault traces in the site vicinity. Their mapping has been reproduced in a geologic map compiled by McLaughlin and others (2001), as shown on Figure 3, Regional Geologic Map. The active Shannon fault is mapped through the southern edge of the property. According to McLaughlin and others, the fault separates Temblor Sandstone bedrock to the north from Monterey Shale to the south. Temblor Sandstone is identified underlying most of the property. Monterey Shale is mapped along the upper northeast margins of the property.

The middle Miocene to Oligocene age (11 to 34 million years old) Temblor Sandstone in the site vicinity consists of pebbly sandstone and conglomerate deposited in a marine continental shelf environment.

The middle Miocene (11 to 16 million years old) Monterey Shale in the site vicinity consists mainly of well-bedded siliceous mudstone, shale, and porcelanite, with minor interbeds of sandstone and dolomite (Stanley and others, 2002). The Monterey Shale is a marine sedimentary unit deposited in a continental shelf environment.

Stanley and others (2002) indicate that maps based on the original work by Bailey and Everhart (1964) may be inaccurate and that geologic relationships are more complex than previously understood. Stanley and others (2002) state that they “found new roadcuts and other outcrops revealing that formerly covered intervals mapped as Temblor Formation by Bailey and Everhart (1964) consist entirely of fine-grained rock typical of the Monterey Formation.”

The faults mapped in the site vicinity are part of a northwest-trending belt of faults that lie sub-parallel to the San Andreas fault along the southwest margin of the Santa Clara Valley. The belt of faults is referred to as the Range Front Fault System, which includes the Sargent, Berrocal, Shannon, Blossom Hill, and Monta Vista faults and other faults that may exist beneath the valley fill to the northeast.

The range front faults generally accommodate both dip-slip and lateral movement. Based on geologic, geophysical, and seismic data, these faults are considered to be the locus of about 3 to 4 kilometers of uplift and an undetermined amount of lateral slip within the last 5 million years (McLaughlin and others, 1999).

Nolan Associates (2002) identified similar geologic relationships on a geologic hazards map produced for the Town of Los Gatos, as shown on Figure 4, Town Geologic Hazards Map. Landslide deposits are not mapped on the property. Landslides, however, are mapped to the south on the opposite side of Shannon Road.

The California Geological Survey (2002) has mapped most of the subject property within a State Seismic Hazard Zone, susceptible to potential seismically-induced landsliding, as shown on Figure 5, State Seismic Hazard Zone Map. The hazard zone mapping for the subject property appears to be based on slope inclinations and not on any particular mapped landslide deposit. The level to gently-inclined area of the property adjacent to Shannon Road is not within a landslide hazard zone.

Seismicity

The greater San Francisco Bay Area is recognized by Geologists and Seismologists as one of the most active seismic regions in the United States. Several major fault zones pass through the Bay Area in a northwest direction (see Figure 1) which have produced approximately 12 earthquakes per century strong enough to cause structural damage.

The faults causing such earthquakes are part of the San Andreas Fault System, a major rift in the earth's crust that extends for at least 700 miles along western California. The San Andreas Fault System includes the San Andreas, Hayward, Calaveras, Greenville, and San Gregorio Fault Zones.

According to Blake (2000), the San Andreas fault is located about 5 miles southwest of the subject site. The Calaveras and Hayward faults are located about 14 miles and 16 miles northeast of the site, respectively. The San Gregorio fault is located about 22 miles to the west and the Greenville fault about 28 miles to the northeast. These faults are considered to be active (Hart and Bryant, 1997), having had surface displacement within Holocene time (the last 11,000 years).

As previously discussed, the Shannon fault has been mapped through the southwest margin of the property, as shown on Figure 3, Regional Geologic Map, Figure 4, Town Geologic Hazards Map, and Figure 7, Site Geologic Map. The Shannon fault and other range front thrust faults are considered active. The nearby Blossom Hill fault (see Figure 3) was identified by Steven F. Connelly, C.E.G. (2003) as an active fault.

Geomorphic and seismic data, as well as surficial deformation documented following the 1989 Loma Prieta earthquake, suggests that faults within the Range Front Fault System may be currently active. Schmidt and others (1995) identified damage to pavement and pipes associated with the Loma Prieta Earthquake, as shown on Figure 6, Map of 1989 Coseismic Deformation. Extensive damage was noted just to the east of the subject property.

The range front faults may be independent seismic hazards, as evidenced by a recent earthquakes along the Monta Vista fault. Activity may also occur as triggered slip in response to large events on the nearby San Andreas fault. Hitchcock and others (1994) suggest that a M6.5 earthquake in 1865 may have been centered on the Shannon fault. Kovach and Beroza (1993) indicate that a M7.1 earthquake could potentially be generated by rupture along the entire length of the Range Front Fault System. As previously noted, Steven F. Connelly, C.E.G. (2003) documented evidence of recent fault activity along the nearby Blossom Hill fault with up to about 3 feet of displacement within the last 600 years.

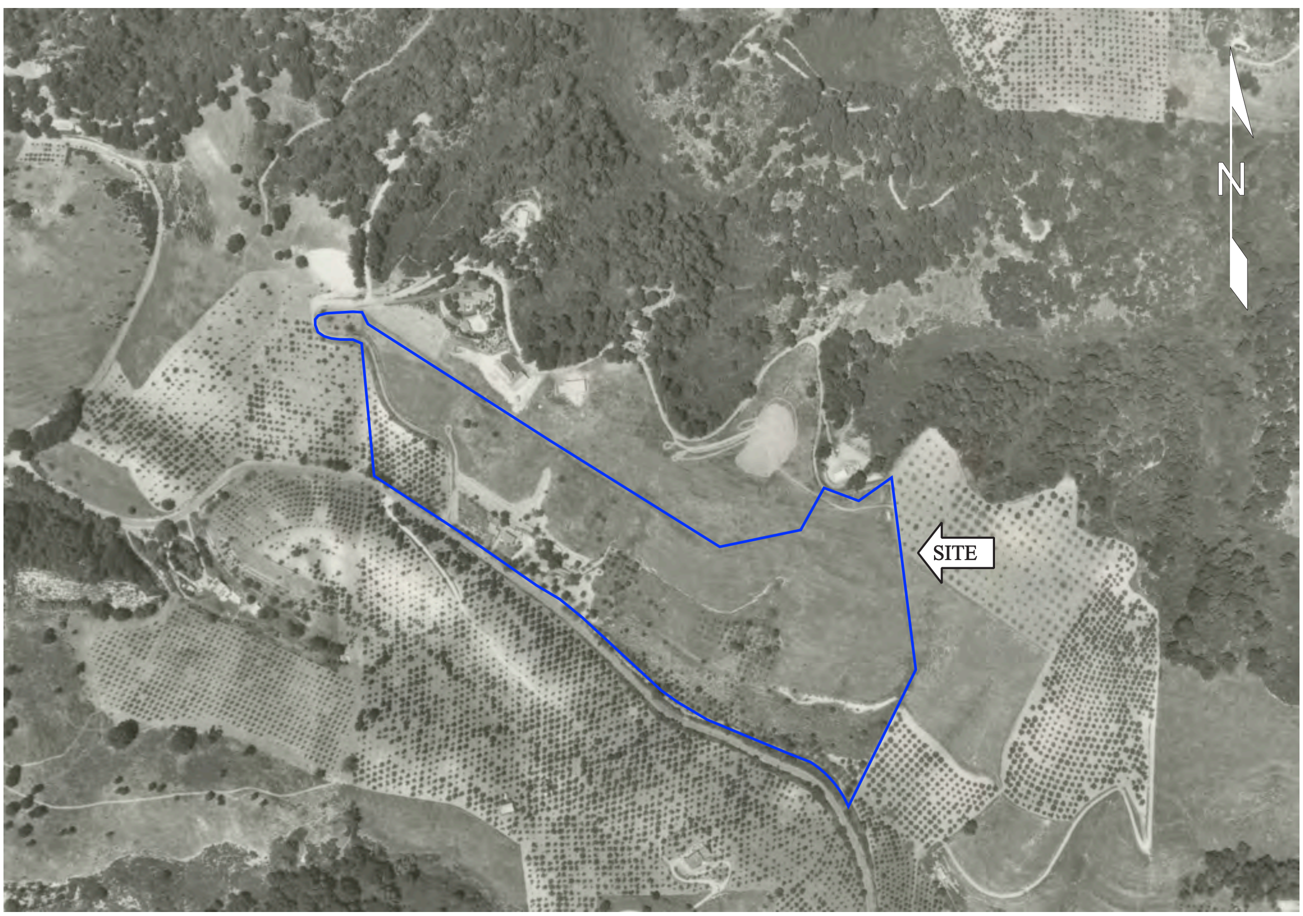


Photo 2: Aerial photograph from 1965 showing the subject property.

Air Photo Review

As part of the air photo review, several GoogleEarth air photos dating from 1985 to the present were examined. The following stereographic pairs of black & white aerial photographs were also examined to observe site conditions and to aid in identifying potential fault or landslide hazards:

Date	Photo Identification	Type	Scale
6-9-56	CIV-6R-72 & 73	B&W	1:20,000
5-16-65	SCL-10-105 & 106	B&W	1:12,000

The subject property is clearly visible in the photos reviewed, as shown on Photo 2 above. The property is located along the southwest flank of a prominent northeast-trending ridgeline. Shannon Road, Sky Lane, and the existing residence were constructed sometime prior to the 1956 photo date. Significant grading does not appear to have occurred on the property. More extensive fruit orchards were located on the property in the past than today.

A linear depression is evident in the air photos along the southwest margin of the property. The depression is coincident with the Shannon fault, as mapped on Figures 3, 4, and 7. Several steep, southwest-oriented drainage swales are located on the steep hillslope on the central portion of the property.

Evidence of recent landsliding or faulting, in the form of fresh scarps, ground cracking, soil lineations, or disturbed vegetation, however, is not apparent on the subject property in the air photos reviewed. Recent debris flow tracks were not observed on the property, however, steeply-inclined swales appear to be potential debris flow source areas.

Previous Investigations

Steven F. Connelly, C.E.G. (2003) completed a Fault Investigation for a proposed home site on Greenridge Terrace located about 3/4 mile to the northwest of the subject property. The Blossom Hill fault was observed thrusting Monterey Formation rocks over younger rocks of the Santa Clara Formation. Evidence of recent fault activity was observed along the Blossom Hill fault and the proposed building site was found to be unsuitable for the proposed home construction.

Steven F. Connelly, C.E.G. (2016) completed an Engineering Geologic Investigation for a proposed home site located on Belgatos Lane about 1/2 mile to the northeast of the subject property. The proposed building site was found to be suitable for the proposed home construction.

Steven F. Connelly, C.E.G. (2019) completed an Engineering Geologic Investigation for a proposed subdivision on Surmont Drive located about 1/2 mile to the north of the subject property. A potentially active fault was identified on the property and appropriate building setbacks were recommended for the proposed new residences.

FIELD INVESTIGATION

Site Reconnaissance

A site reconnaissance was completed of the subject property during the course of this current investigation. The proposed building sites are located on a gently-inclined ground at the base of moderately to steeply-inclined hillsides or on a hilltop area, as shown on Figure 7, Site Geologic Map.

Bedrock exposures of Monterey Shale occur within cuts for dirt farm roads on the property, as shown on Photos 3 and 4 below. A bedding attitude was measured in a roadcut located on Lot 3, as shown on Figure 7. The bedding strikes towards the northwest and dips moderately towards the northeast.

Evidence of shallow soil sloughing, recent rotational landsliding, or fault activity was not observed the property during the site reconnaissance. Fresh scarps, ground cracking, soil lineations, or disturbed vegetation, also was not apparent on the subject property during the site reconnaissance.

Photo 3: View of Monterey Shale bedrock exposed in a roadcut on Lot 3.

Photo 4: View of Monterey Shale bedrock exposed in a roadcut on Lot 7.

Four steeply-inclined bowl-shaped drainage swales are located on the steep southwest facing hillside on the property (see Photo 8 below). A smaller drainage swale is located on the eastern margin of Lot 7. These drainage swales appear to be potential debris flow source terrains, as approximately depicted on Figure 7, Site Geologic Map.

Debris flow landslides occur when loose soils located on steep hill slopes are saturated during intense rainstorms. The soils liquefy and travel rapidly downslope, incorporating rocks, trees, and debris. The debris is deposited on gentle slopes below as a debris fan. These types of landslides were not recognized in the San Francisco Bay Area until the 1982-1983 winter when abundant debris flow landslides occurred. Several deaths occurred when debris flows impacted residences located at the base of debris flow landslide terrain.

Subsurface Investigation

As part of this investigation, eleven test pits were excavated on the property, in the approximate locations shown on Figure 7, using a backhoe (see Photo 5 below). Detailed logs of the materials encountered in the test pits are shown on Figures 8 through 18.

Photo 5: View of backhoe excavating Test Pit 1.

Photo 6: View of Monterey Shale bedrock exposed in Pit 1.

Photo 7: View of Monterey Shale bedrock exposed in Pit 1.

Test Pit 1 was excavated on Lot 1 and encountered about 2.5 feet of colluvial soil, composed of firm to stiff, low plasticity, silty clay. Weathered bedrock of the Monterey Shale composed of moderately bedded, moderately hard, siltstone and shale with white carbonate staining was observed, as shown on Photos 6 and 7 above. Bedding measured in Test Pit 1 strikes North 80 West and dips 50 degrees towards the North.

Test Pit 2 was excavated within a drainage swale on Lot 2. The pit encountered about 10 feet of colluvial soil composed of firm to stiff silty clay and clayey silt with rock fragments of Monterey Shale. Weathered bedrock of the Monterey Shale was encountered at the bottom of the test pit.

Test Pit 3 was excavated within a drainage swale on Lot 3. The pit encountered about 7 feet of colluvial soil underlain by weathered bedrock of the Monterey Shale.

Test Pit 4 was excavated within a corral at the lower margin of Lot 5. The test pit encountered thick deposits of colluvial soil or slope wash to the bottom of the pit at a depth of 9 feet.

Test Pit 5 was excavated within the broad drainage swale along the southwest margin of Lot 7. Thick deposits of colluvial soil or slope wash were encountered to a depth of about 13 feet. Highly weathered, slightly sheared, claystone was observed at the bottom of the pit. The claystone is assumed to be Monterey Shale, however, this identification is questionable due to the severe weathering of the bedrock.

Test Pit 6 was excavated at the base of the steep hillslope on Lot 7. About 2.5 feet of tilled topsoil underlain by weathered siltstone bedrock of the Monterey Shale was encountered.

Test Pit 7 was excavated within the fruit orchard at the base of the steep drainage swale on Lot 7. Thick deposits of tilled topsoil and colluvial soil interpreted to be debris flow deposits were encountered to the bottom of the test pit at 11 feet.

Test Pit 8 was excavated at the base of a small drainage swale at the eastern margin of Lot 7. About 10 feet of colluvial soil underlain be siltstone and shale of the Monterey Shale was encountered.

Test Pit 9 was excavated near the head of the steep drainage swale on Lot 5, as shown on Photo 8 below. About 7 feet of colluvial soil underlain be siltstone and shale of the Monterey Shale was encountered.

Test Pit 10 was excavated near the southwest edge of the property on Lot 7. Thick deposits of colluvial soil or slope wash were encountered to a depth of about 12 feet. Highly weathered, slightly sheared, claystone was observed at the bottom of the pit. Due to severe weathering the claystone bedrock is also assumed to be Monterey Shale.

Test Pit 11 was excavated on the broad hilltop area on Lot 9, as shown on Photo 9 below. About 2.5 feet of colluvial soil underlain by weathered bedrock composed of siltstone and shale of the Monterey Shale.

The property appears to be underlain by Monterey Shale, in contrast to Temblor Formation, as previously mapped by McLaughlin and others (2001) and Nolan Associates (2002). Evidence of landslide slip planes or fault rupture surfaces was not observed in any of the test pits. Groundwater also was not encountered in any of the excavations.

Photo 8: View of backhoe excavating Test Pit 9.

Photo 9: View of backhoe excavating Test Pit 11.

FINDINGS

Based upon the results of this Engineering Geologic Investigation, an active trace of the Shannon fault crosses the southwest margin of the property. Further investigation is necessary to accurately define the fault location and determine appropriate fault setback recommendations. Potential debris flow hazards impact potential homesites below debris flow source terrains on the property. Avoidance or construction of debris walls above proposed homesites is recommended. Thick soil deposits mantle the level or gently-inclined areas on the lower portion of the subject property. Resistant weathered bedrock of the Monterey Shale underlies the property at varying depths. In my opinion, the soil or weathered bedrock should provide good support for the proposed residences provided the foundation systems are designed and constructed according to the recommendations to be provided by Milstone Geotechnical. It is my opinion that the potential hazard from liquefaction, ground subsidence, lateral spreading, tsunamis, seiches, or flooding to the proposed subdivision, is very low to minimal.

Seismic Hazards

Based upon the results of this Engineering Geologic Investigation, a trace of the active Shannon fault has been mapped through the southwest margin of the property, as approximately shown on Figure 7. Further investigation is necessary to accurately define the fault location and determine appropriate fault setback recommendations. Thick soil deposits in the area, however, inhibit excavation to bedrock necessary to observe fault relationships. A deep excavation with an excavator or bulldozer will be required to expose bedrock at depth. The proposed homesite on Lot 7 appears to be the only homesite potentially impacted by ground rupture hazards from the Shannon fault. The remaining homesites, in my opinion, are sufficiently removed from the Shannon fault and are not subject to primary ground rupture hazards due to active faulting.

It is reasonable to assume that the proposed subdivision will be subjected to moderate to strong shaking from a major earthquake on the Shannon fault, or one of the other active or potentially active faults in the Bay Area during the design life of the proposed residences. During such an earthquake, the danger from primary fault offset through the proposed residences is low (with the exception of Lot 7), but moderate to strong ground shaking is likely to occur.

Based on a deterministic analysis of preliminary data for selected California faults by Blake (2000), one of the range front faults such as the Shannon fault presents the most significant seismic shaking hazard to the site. Using a fault attenuation relationship by Idriss (1994), a peak site acceleration of 0.75 g and a Modified Mercalli shaking intensity of XI are predicted for the site from a possible 6.7 Mw earthquake on the Shannon fault.

Historically, Blake (2000) indicates that the property experienced a site acceleration of 0.36 g and a Modified Mercalli shaking intensity of X due to the 6.3 Mw 1865 Earthquake. The 1865 Earthquake was possibly associated with an earthquake in the Range-Front Fault System along a fault such as the Shannon fault. A site acceleration of 0.25 g and a Modified Mercalli shaking intensity of IX occurred on the property during the recent 7.0 Mw 1989 Loma Prieta Earthquake centered about 13 miles south of the site. The property experienced 0.16 g from the 1906 Earthquake on the San Andreas fault, located about 45 miles to the northwest.

Properly designed buildings using the California Building Code (California Building and Standards Commission, 2007) and sound engineering practices should mitigate the damaging effects of ground shaking. As a minimum, the proposed residences should be designed using current building code requirements.

It is possible that secondary fissures or ground cracks may damage the subject property during an earthquake on one of the range front faults or San Andreas fault. Extensive secondary ground cracks unrelated to primary fault offset occurred during the 1989 Loma Prieta Earthquake.

According to Schmidt and others (1995), minor to severe damage occurred to several residences nearby (see Figure 6) as a result of secondary fault movement. These fissures or ground cracks were commonly focused on ridge top locations and were associated with weaker shale interbeds (Cotton and others, 1990), preexisting landslides, or intense ground shaking (Hart and others, 1990).

The U.S. Geological Survey (2008) recently cited a 63 percent probability that a Richter magnitude 6.7 or greater earthquake, similar to the 1989 Loma Prieta Earthquake, will occur on one of the active faults in the San Francisco Bay Region by the year 2032. A 21 percent probability was attributed specifically to the nearby San Andreas fault that a large earthquake will occur along its trace by the year 2032, as shown on Figure 20, Earthquake Probability Map.

In addition, Dr. David Schwartz of the U.S.G.S. has cited a 9 percent probability for an earthquake on one of the range-front faults such as the Shannon fault, by the year 2032 in a recent lecture (oral communication).

Landsliding

Based upon my review of air photos, site reconnaissance, and subsurface investigation, the some of the proposed building sites are underlain by resistant weathered bedrock at shallow depth. Other sites are underlain be thick soils susceptible to shrink swell phenomena. The soils, however, are relatively stiff and compact. In my opinion, the resistant weathered bedrock should provide adequate support for the proposed residences. Sites underlain by thick soils will require appropriate foundation design to be provided by Milstone Geotechnical.

In my opinion, the potential for deep-seated landsliding on the property is very low. Evidence of recent deep-seated landsliding was not observed on or adjacent to the property. In addition, in my opinion, the hazard due to potential earthquake-induced landsliding to the property is relatively low. Springs or seeps were not observed on the property during my review of air photos, site reconnaissance, or subsurface investigation. These groundwater sources, commonly associated with landslides or contributing to potential landsliding were not observed.

Based upon review of historic air photos, site reconnaissance, and subsurface investigation, steeply-inclined drainage swales on the property appear to be potential debris flow source terrains. Proposed homesites located below these drainage channels are subject to a significant debris flow landslide hazard. Consequently, I recommend avoidance or construction of debris walls to protect the proposed new residences from potential debris flow impact, as approximately shown on Figure 7, Site Geologic Map. Walls should be designed with a minimum height of 6 feet, designed to resist impact forces, angled to direct debris away from homesites, and provided with an area behind the walls to allow routine maintenance.

Liquefaction

Liquefaction most commonly occurs during earthquake shaking in loose fine sands and silty sands associated with a high ground water table. Based on the subsurface investigation, the property is underlain by stiff soils and weathered bedrock at shallow depth that are not susceptible to liquefaction. Liquefaction is therefore, in my opinion, unlikely to occur on the property. The California Geological Survey (2002) indicates that the property is located in an area with a very low susceptibility to liquefaction, as shown on Figure 5.

Ground Subsidence

Ground subsidence may occur when poorly-consolidated soils densify as a result of earthquake shaking. Since the proposed subdivision is underlain by stiff soils and resistant weathered bedrock at relatively shallow depth, the hazard due to ground subsidence is, in my opinion, considered negligible.

Lateral Spreading

Lateral spreading may occur when a weak layer of material, such as a sensitive silt or clay, loses its shear strength as a result of earthquake shaking. Overlying blocks of competent material may be translated laterally towards a free face. Since the proposed subdivision is underlain by stiff soils and resistant weathered bedrock at shallow depth, the hazard due to lateral spreading is, in my opinion, considered negligible.

Tsunamis, Seiches, and Flooding

The subject property is located in an inland area removed from the hazard of inundation by tsunamis (Ritter and Dupre, 1972). The Association of Bay Area Governments (1980b) indicates that the subject property is located in an area free from the hazard of seiches and flooding caused by dam failure.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

A list of References, Table, and Figures are attached and complete this report:

REFERENCES

Association of Bay Area Governments, 1980a, Map of Liquefaction Susceptibility, San Francisco Bay Region, Map Scale 1:250,000.

Association of Bay Area Governments, 1980b, Dam Failure Inundation Areas, San Francisco Bay Region, Map Scale 1:250,000.

Bailey, E.H., and Everhart, D.L., 1964, Geology and Quicksilver Deposits, New Almaden District, Santa Clara County, California: U.S. Geological Survey Professional Paper 360.

Blake, Thomas, F., 2000, EQFAULT, Version 3.00, A Computer Program for the Estimation of Peak Horizontal Acceleration from 3-D Fault Sources, Windows 95/98 Version.

Blake, Thomas, F., 2000, EQSEARCH, Version 3.00, A Computer Program for the Estimation of Peak Horizontal Acceleration from California Historical Earthquake Catalog, Windows 95/98 Version.

California Building and Standards Commission, June 2007, 2007 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 2 of 2, Based on 2006 International Building Code.

California Division of Mines and Geology, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117.

California Geological Survey, 2002, State of California Seismic Hazard Zones, Los Gatos Quadrangle, Map Scale 1:24,000.

Cotton, W.R., Fowler, W.L., and Van Velsor, J.E., 1990, Coseismic Bedding Plane Faults and Ground Fissures Associated with the Loma Prieta Earthquake of 17 October 1989, in "The Loma Prieta (Santa Cruz Mountains), California, Earthquake of 17 October 1989", California Division of Mines and Geology, Special Publication 104.

Cummings, J.C., 1968, The Santa Clara Formation and possible post-Pliocene slip on the San Andreas fault in central California, in Dickinson, W.R., and Grantz, A., eds., Proceedings of conference on geologic problems of San Andreas fault system: Stanford University Publications in Geological Sciences, v. 6, p. 191-207.

Dibblee, T.W. Jr. and Brabb, E.E., 1978, Preliminary Geologic Map of the Los Gatos Quadrangle, Santa Clara and Santa Cruz Counties, California: U.S. Geological Survey Open-File Report 78-453, Map Scale 1:24,000.

Dibblee, T.W. Jr., 2005, Geologic Map of the Los Gatos Quadrangle, Santa Clara and Santa Cruz Counties, California: Dibblee Geology Center Map #DF-157.

Hart, E.W. and Bryant, W.A., revised 1997, Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps, California Division of Mines and Geology Special Publication 42.

Hart, E.W., Bryant, W.A., Wills, C.J., and Treiman, J.A., 1990, The Search for Fault Rupture and Significance of Ridgetop Fissures, Santa Cruz Mountains, in "The Loma Prieta (Santa Cruz Mountains), California, Earthquake of 17 October 1989", California, California Division of Mines and Geology, Special Publication 104

Hitchcock, Christopher S., Kelson, Keith I., and Thompson, Stephen C., 1994, Geomorphic Investigations of Deformation Along the Northeastern Margin of the Santa Cruz Mountains: U.S. Geological Survey Open-File Report 94-187.

ICBO, 1997, Uniform Building Code: International Conference of Building Officials, Whittier, California, volumes 1 and 2.

Idriss, I.M., 1994, Attenuation Coefficients for Deep and Soft Soil Conditions, personal communication to T.F. Blake.

Kovach, R.L., and Beroza, G.C., 1993, Seismic potential from reverse faulting on the San Francisco Peninsula: Bulletin of Seismological Society of America, v. 83, p. 597-602.

McLaughlin, R.J., Langenheim, V.E., Schmidt, K.M., Jachens, R.C., Stanley, R.G., Jayko, A.S. McDougall, Tinsley, J.C., and Valin, Z.C., 1999, Neogene contraction between the San Andreas fault and the Santa Clara Valley, San Francisco Bay region, California: International Geology Review, v. 41, p. 1-30.

McLaughlin, R.J., Clark, J.C., Brabb, E.E., Helley, E.J., and Colon, C.J., 2001, Geologic Maps and Structure Sections of the southern Santa Cruz Mountains, Santa Clara and Santa Cruz Counties, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2373.

Nolan Associates, revised 11/21/02, Geologic Map for the Town of Los Gatos General Plan Update.

RBF Consulting, July 2000, Geologic Hazards Map, Town of Los Gatos, California.

Richter, C.F., 1957, Elementary Seismology, San Francisco, CA: W.H. Freeman Co.

Ritter, J.R. and Dupre, W.R., 1972, Map Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region, California, U.S. Geological Survey Map MF-480.

Schmidt, K.M., Ellen, S.D., Haugerud, R.A., Peterson, D.M., and Phelps, G.A., 1995, Breaks in pavement and pipes as indicators of range-front faulting resulting from the 1989 Loma Prieta earthquake near the southwest margin of the Santa Clara Valley, California: U.S. Geological Survey Open-File Report 95-820.

Southern California Earthquake Center, June 2002, Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Landslide Hazards in California.

Stanley, R.G., Jachens, R.C., Lillis, P.G., McLaughlin, R.J., Kvenvolden, K.A., Hostettler, F.D., McDougall, K.A., Magoon, L.B., 2002, Subsurface and petroleum geology of the southwestern Santa Clara Valley ("Silicon Valley"), California: U.S. Geological Survey Professional Paper 1663.

Steven F. Connelly, C.E.G., April 17, 2003, Fault Investigation, Schaadt Property, APN 527-15-002, Greenridge Terrace, Los Gatos, California.

Steven F. Connelly, C.E.G., September 2003, Holocene Activity of a Range-Front Fault in the Southern San Francisco Bay Area, Abstract, in Proceedings of 46th Annual Meeting of the Association of Engineering Geologists, 2003.

Steven F. Connelly, C.E.G., December 9, 2016, Engineering Geologic Investigation, Proposed Residence, APN 527-26-009, 303 Belgatos Lane, Los Gatos, California.

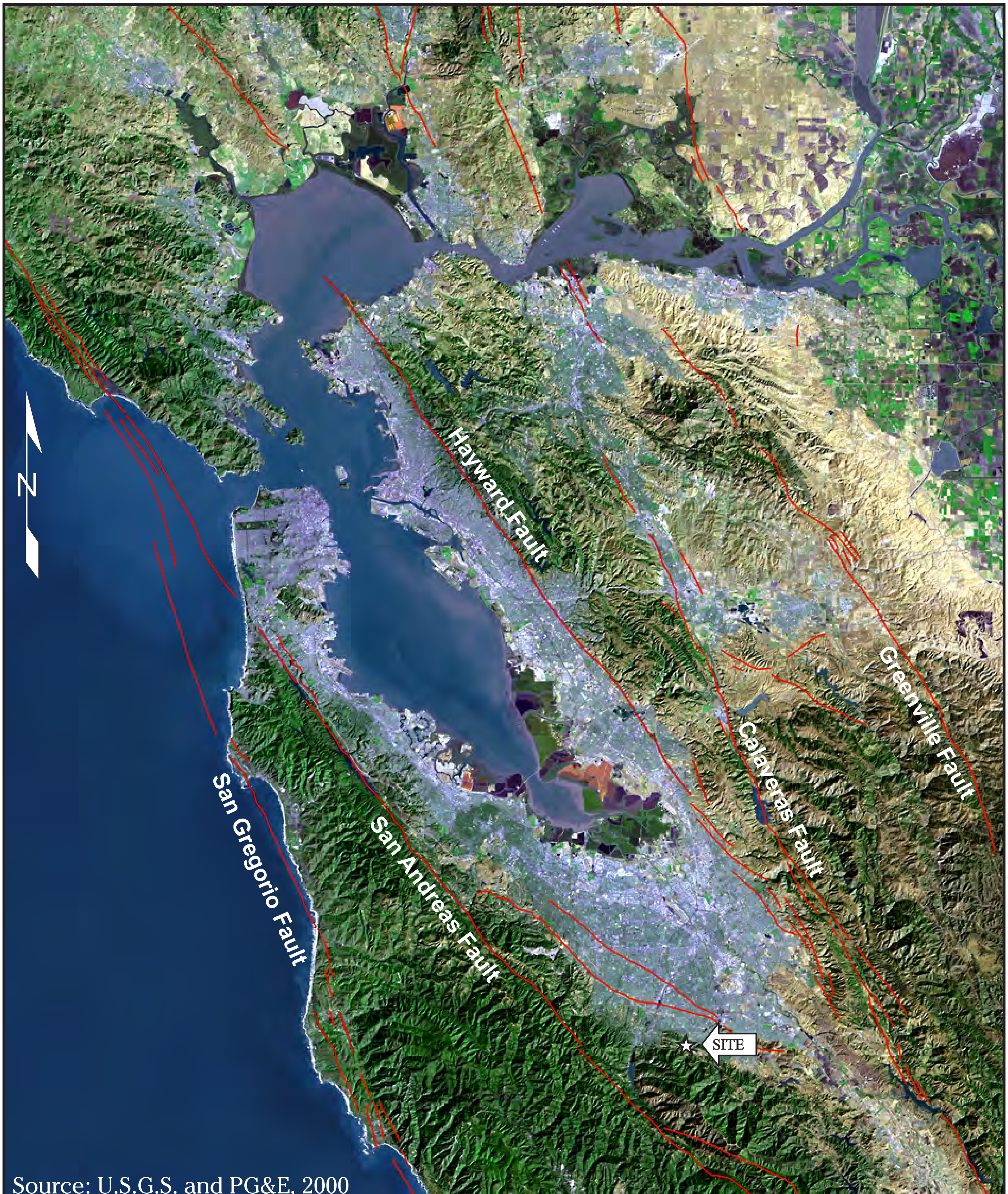
Steven F. Connelly, C.E.G., May 18, 2019, Engineering Geologic Investigation, Proposed Residences, APN 527-20-003, 400 Surmont Drive, Los Gatos, California.

Terratech, Inc., 1990, Concentrated Damage from the Loma Prieta Earthquake in the Monta Vista Fault Study Area, Santa Clara County, California.

U.S. Geological Survey, 2008, 2008 Bay Area Earthquake Probabilities, http://earthquake.usgs.gov/regional/nca/ucerf/.

TABLE I - MODIFIED MERCALLI INTENSITY SCALE

I	Not felt. Marginal and long-period affects of large earthquakes.
II	Felt by persons at rest, on upper floors, or favorably placed.
III	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV	Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a ball striking walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden walls and frames creak.
V	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move.
VI	Felt by all. May frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken, knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visible, or heard to rustle).
VII	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving along sand and gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundation if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX	General panic. Masonry destroyed or seriously damaged. (Damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Buried pipes broken. Conspicuous ground cracks. In alluviated areas sand and mud ejected, earthquake fountains, sand craters.
X	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks to canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI	Rails bent greatly. Underground pipelines completely out of service.
XII	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.
Source:	Richter, C.F., Elementary Seismology, San Francisco, CA: W.H. Freeman Co., 1957.
Note:	To avoid ambiguity, the quality of masonry, brick, or other material is specified by the following lettering system. (This has no connection with the conventional classes A, B, and C construction.) Masonry A. Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces. Masonry B. Good workmanship and mortar; reinforced, but not designed to resist lateral forces. Masonry C. Ordinary workmanship and mortar; no extreme weaknesses, like failing to tie in at corners, but neither reinforced nor designed to resist horizontal forces. Masonry D. Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.



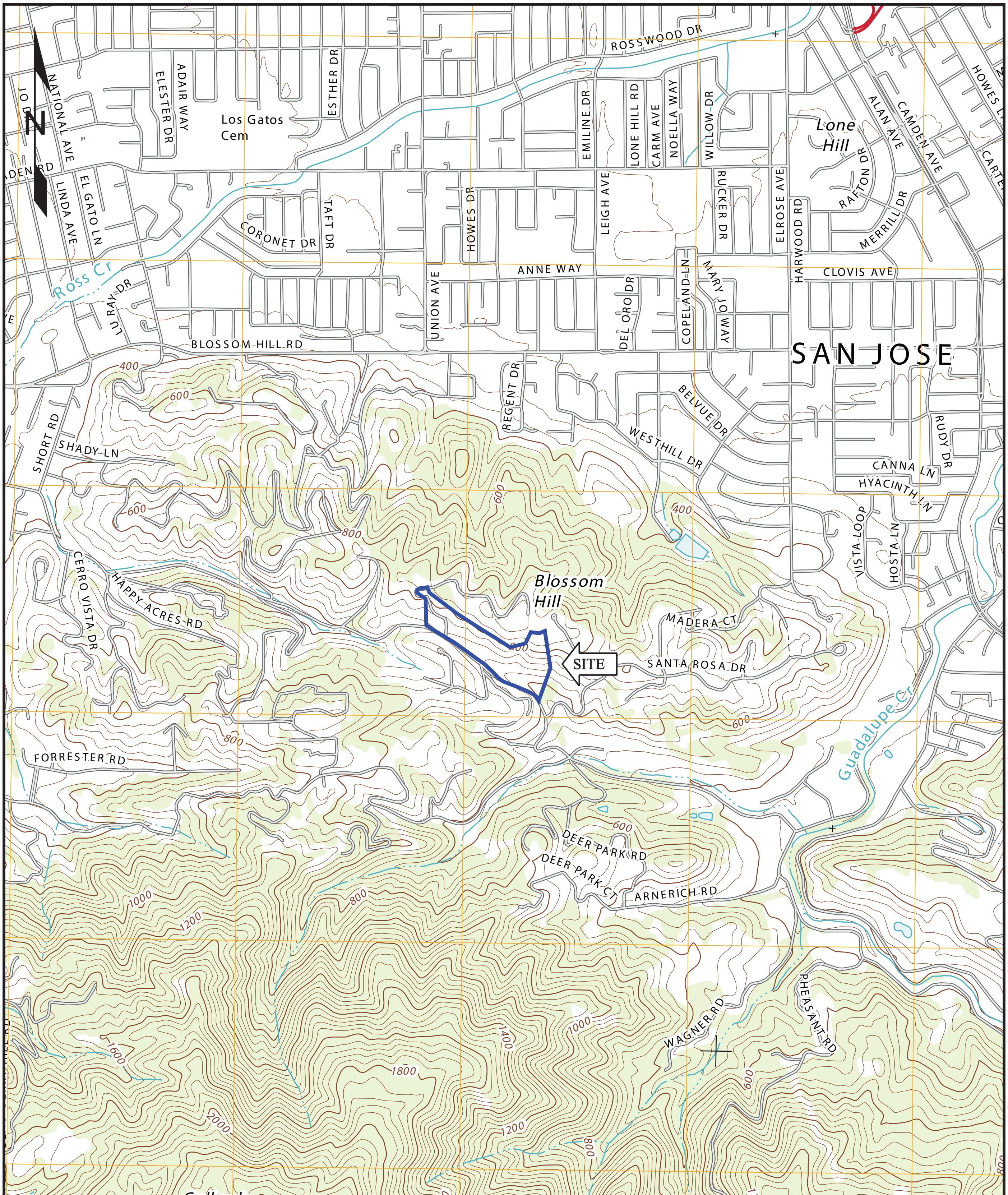
Site Location Map

STEVEN F. CONNELLY, C.E.G.

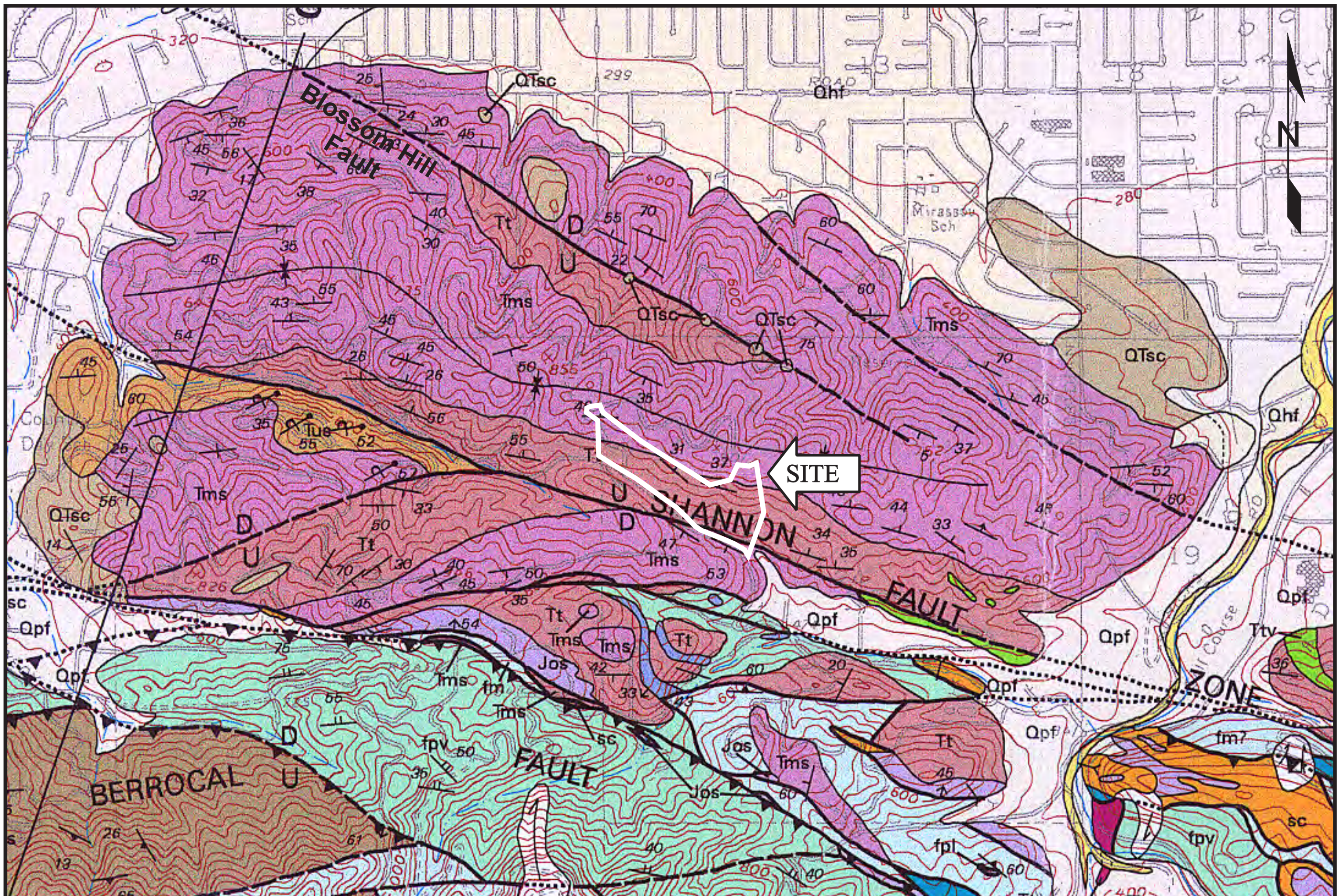
Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Approximate Scale	Date	Figure
2104	1 Inch = 10 Miles	2/5/21	1



Regional Topographic Map	APN 537-27-047 14915 Shannon Road Los Gatos, California			
STEVEN F. CONNELLY, C.E.G. Consulting in Engineering Geology	Project #	Scale	Date	Figure
	2104	1 Inch = 2000 Feet	2/5/21	2



EXPLANATION

Geologic Contact, dashed where approx., dotted where concealed

Fault Trace, dashed where approx., dotted where concealed, queried where uncertain

Thrust or Reverse Fault

35 Strike and Dip of Bedding

35 Strike and Dip of Foliation

Qls Landslide deposit, arrows in direction of movement

Qhf	Alluvial fan deposits (Holocene)
Qls	Landslide deposits, undivided (Holocene and Pleistocene)
Qpf	Alluvial fan deposits (Pleistocene)
QTsc	Santa Clara Formation (Pleistocene and Pliocene)
Tus	Unnamed sandstone (mid Miocene or younger)
Tms	Monterey Shale (mid and lower Miocene)
Tt	Temblor Sandstone (mid Miocene to Oligocene?)
Jos	Serpentinized ultramafic rocks (Jurassic)
fm	Melange of the Central belt (Upper Cretaceous)
fpl	Foraminiferal limestone (Upper and Lower Cretaceous)
fpv	Volcanic rocks (Lower Cretaceous)
fms	Sandstone (Upper and or Lower Cretaceous)

Source: McLaughlin and others, 2001

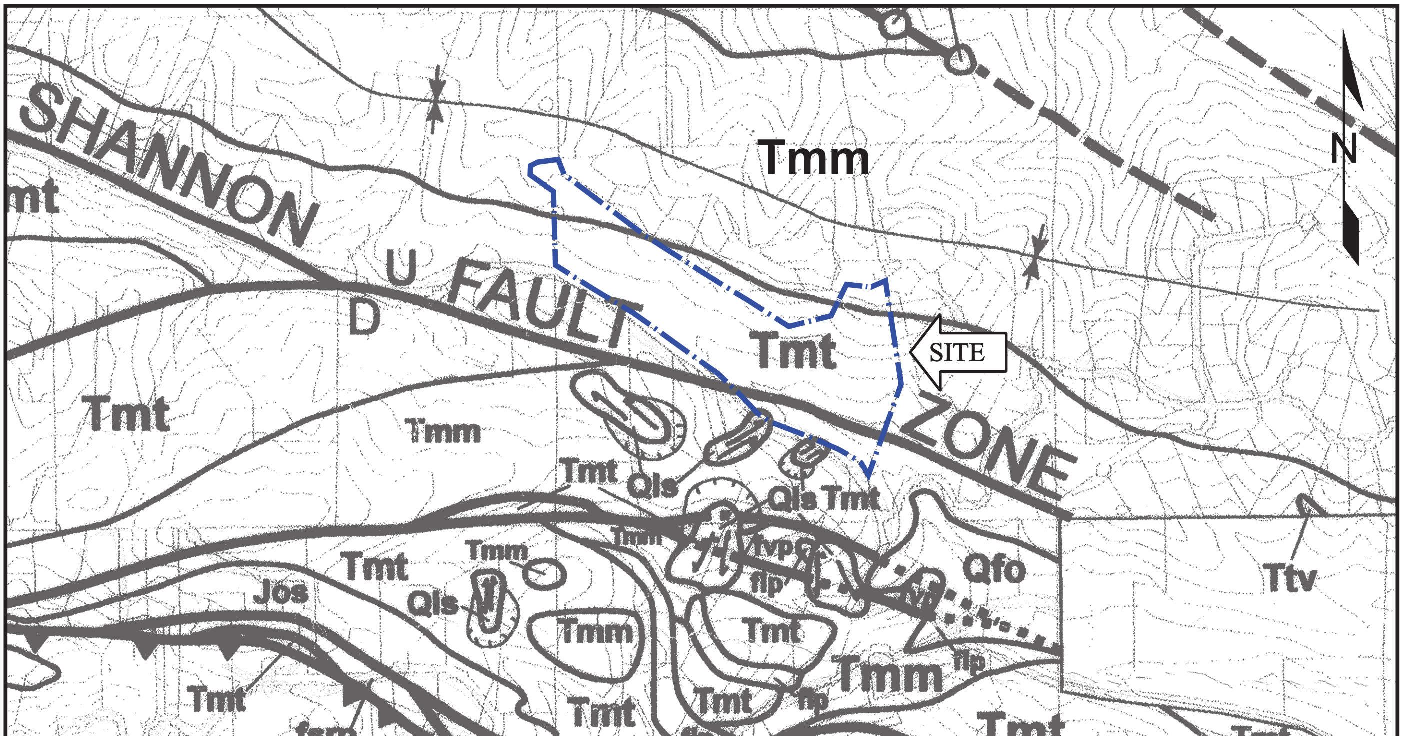
Regional Geologic Map

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 2000 Feet	2/5/21	3



EXPLANATION

Qfl	Modern fluvial deposits
Qls	Landslide deposits
Qal	Undifferentiated alluvium
Qt	Youngest fluvial terrace deposits
Qf	Youngest alluvial fan deposits
Qto	Older fluvial terrace deposits
Qfo	Older alluvial fan deposits

- ? Contact, dasted where approximate, dotted where concealed
- U D ? Fault, dashed where approximate, dotted where concealed, queried where uncertain, U and D denote up and downthrouwn blocks
- ? Thrust fault, barbs on upper plate
- Synclinal axis
- Landslide headscarp
- Landslide mass, arrows indicate direction of movement

Qtsc	Santa Clara Formation
Tmm	Monterey Shale
Tmt	Temblor Sandstone
Tmv	Dacitic tuff, tuff breccia, and intrusive rocks
Jos	Serpentinite
sc	Siliceous, mercury bearing carbonates
flp	Limestone
fcp	Chert
fvp	Basalt
fsrp	Melange
fsm	Metasandstone
fcm	Radiolarian chert
fvm	Basalt
fsrm	Melange

Source: Nolan Associates, revised 11/21/02

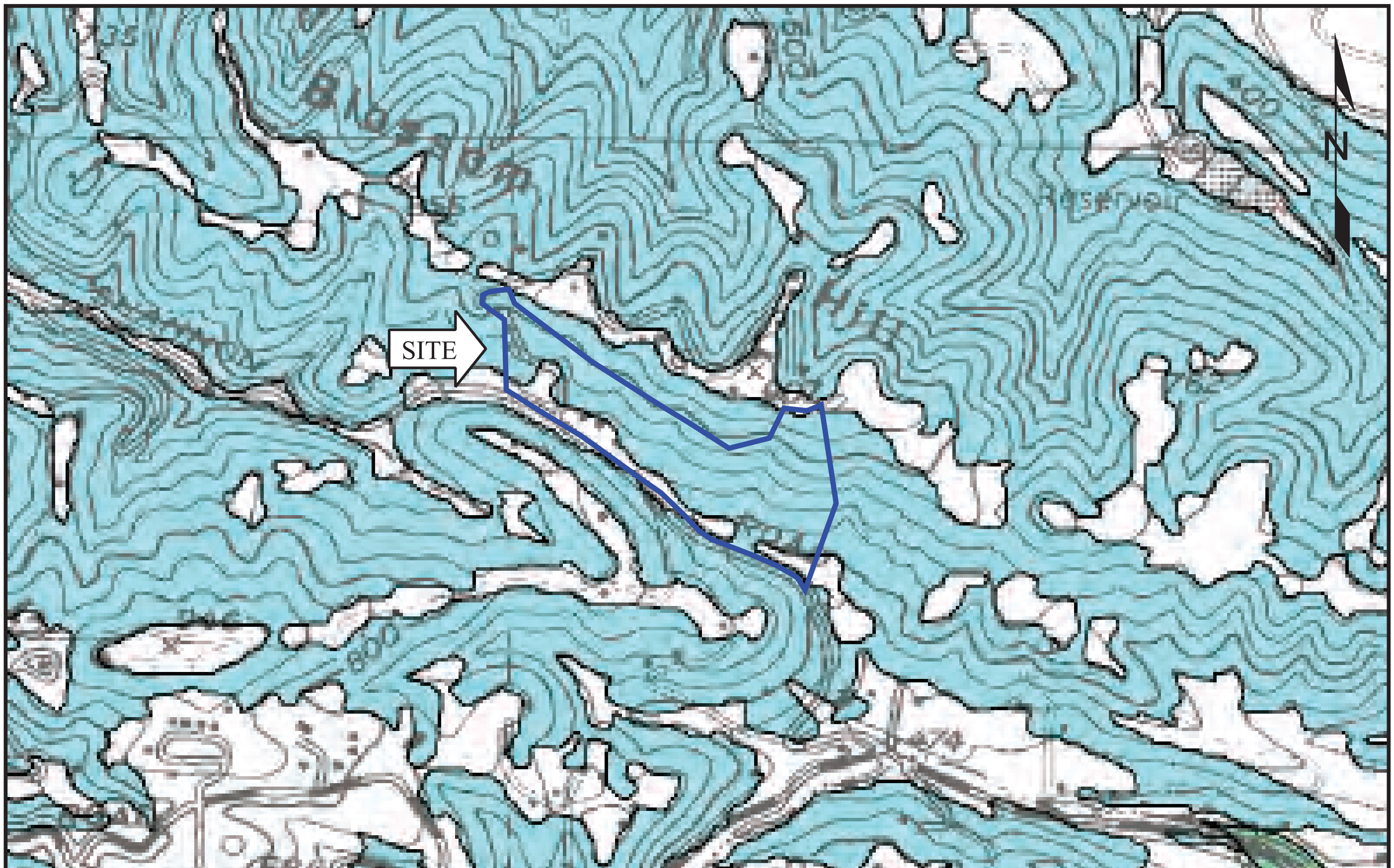
Town Geologic Hazards Map

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 1000 Feet	2/5/21	4



EXPLANATION

Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation would be required

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation would be required.

Base: California Geological Survey, 2002

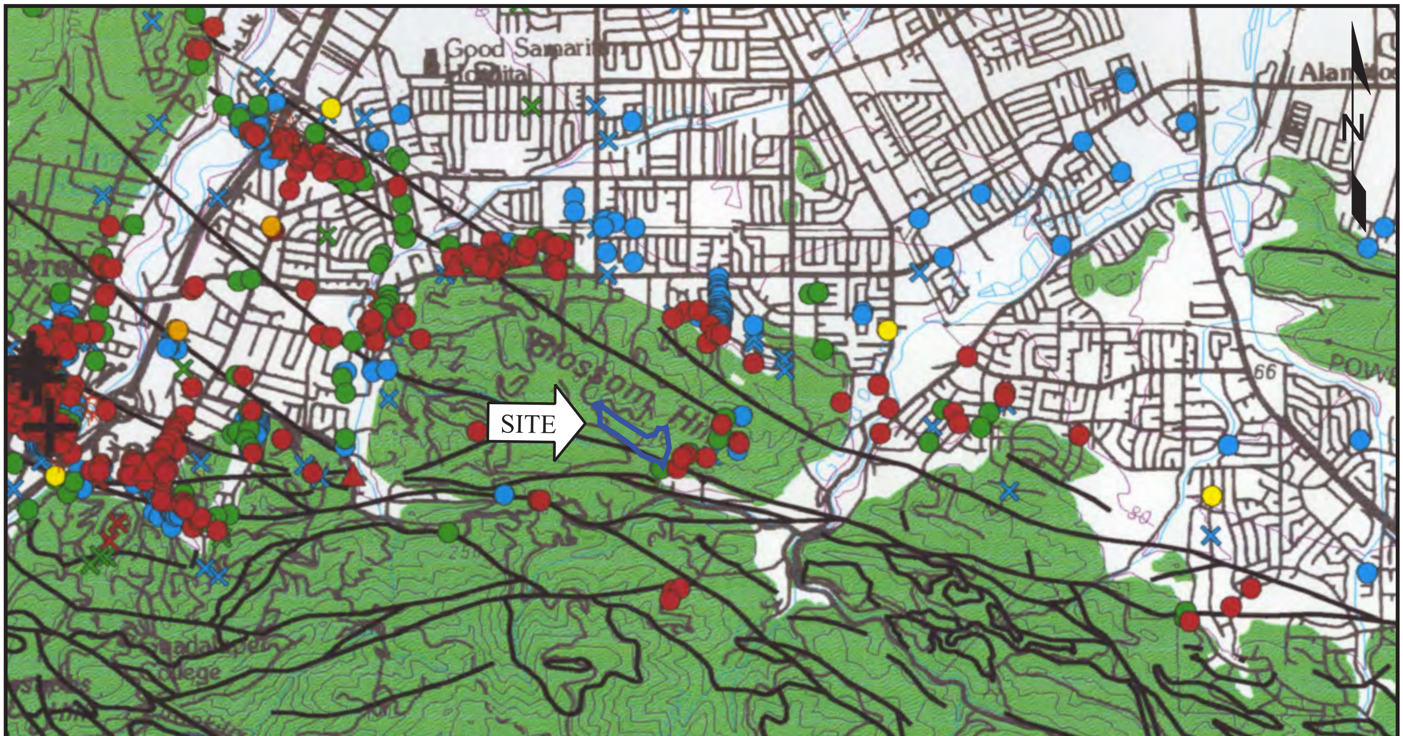
State Seismic Hazard Zone Map

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 1000 Feet	2/5/21	5



Categories of Damage

COSEISMIC PAVEMENT BREAKS

IN ASPHALT

- Linear zone of complex rupture; denotes area of severe damage
- Fresh break or buckle suggestive of contractional deformation
- Fresh break with unspecified sense of deformation

IN CONCRETE

- Fresh contractional break in channel lining of Los Gatos Creek
- Fresh break or buckle suggestive of contractional deformation
- Apparently fresh break with unspecified sense of deformation
- Break with unspecified sense of deformation

IN BOTH ASPHALT AND CONCRETE

EXTENSIONAL RUPTURE IN BOTH PAVEMENT AND SOIL

COSEISMIC PIPE BREAKS

- Underground water line
- Underground natural-gas distribution line
- Above-ground natural-gas distribution line
- More than one type of pipe

OTHER BREAKS

- In both pipe and pavement
- Pavement break that pre-dates the earthquake
- Combination of pre-earthquake and coseismic break in pavement
- Contractional deformation that post-dates the earthquake

OTHER SYMBOLS

- Fault

Source: Schmidt and others, 1995

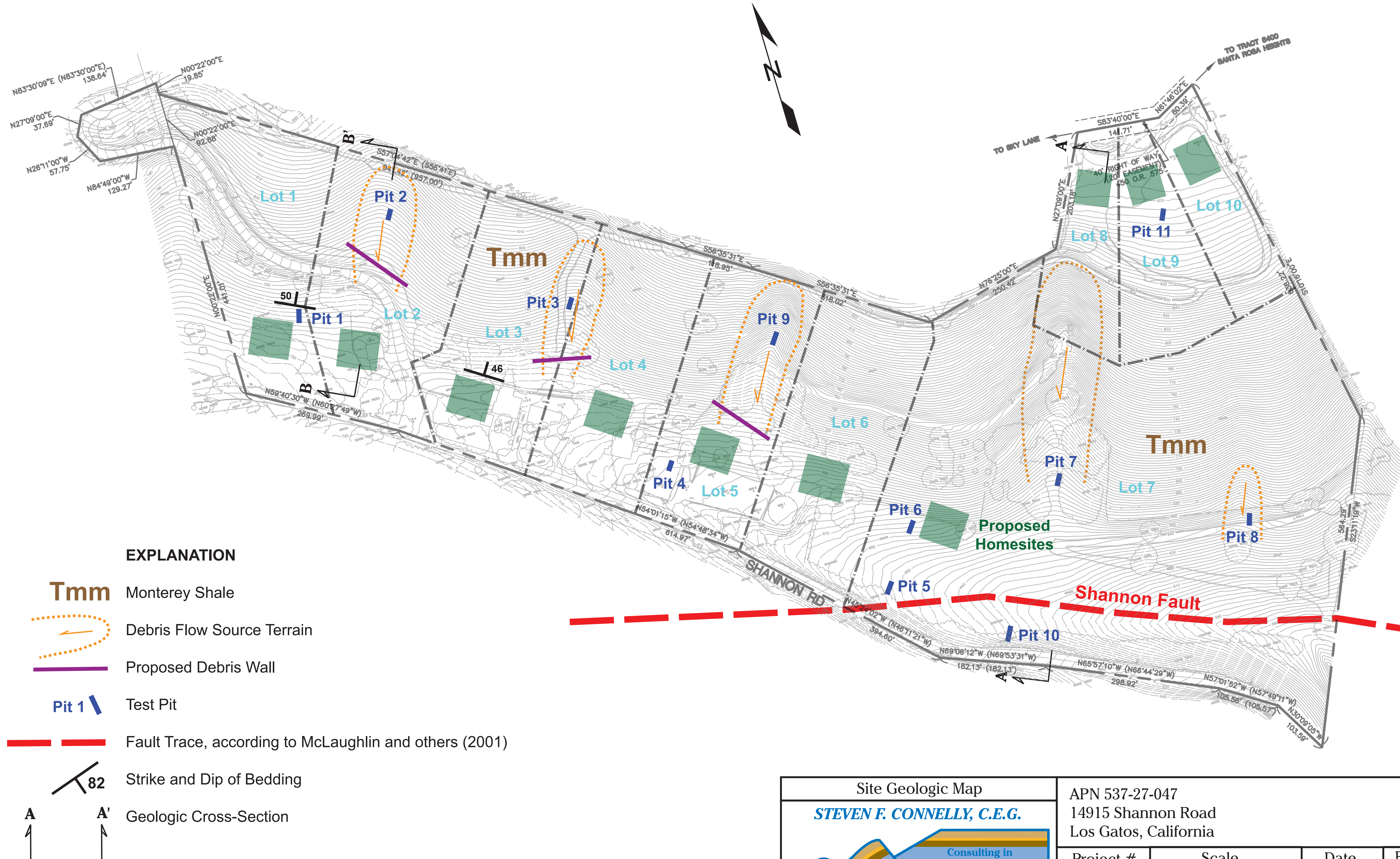
Map of 1989 Coseismic Deformation

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 1 Mile	2/5/21	6



Base: Record Boundary by Ruth and Going, Inc., 1/31/19

Site Geologic Map

STEVEN F. CONNELLY, C.E.G.

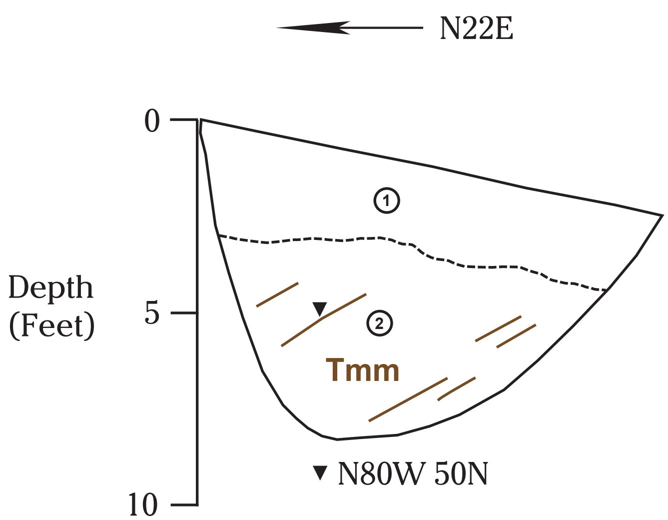
Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 160 Feet	2/5/21	7

Symbols

- gradational contact
- relatively sharp contact
- very sharp contact
- N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Colluvial Soil)

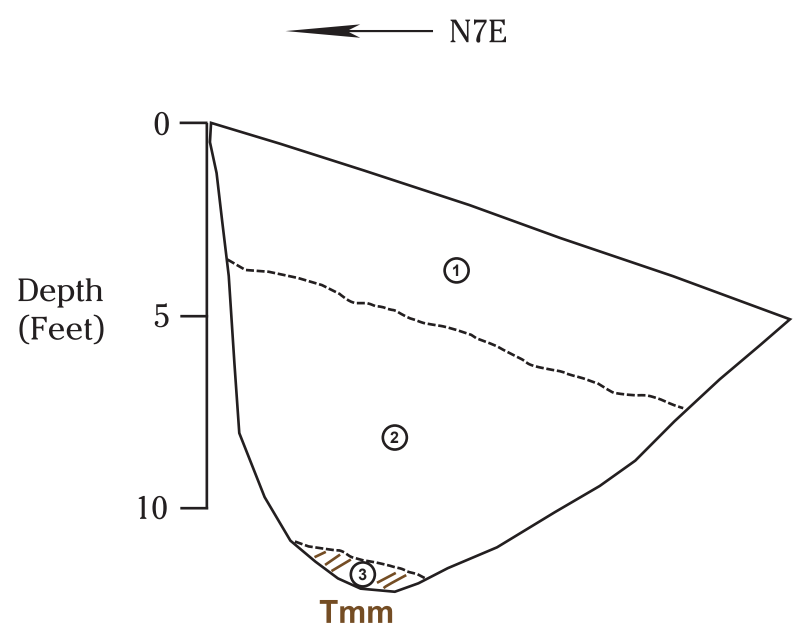
② white, 10YR8/1 to very pale brown, 10YR7/3, siltstone and shale, moderately hard, lithified, moderately bedded, stained with white calcium carbonate (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/22/20

Log of Test Pit 1	APN 537-27-047 14915 Shannon Road Los Gatos, California			
STEVEN F. CONNELLY, C.E.G. Consulting in Engineering Geology	Project #	Scale	Date	Figure
	2104	1 Inch = 5 Feet	2/5/21	8

Symbols

- gradational contact
- relatively sharp contact
- very sharp contact
- N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Colluvial Soil)

② very dark grayish brown, 10YR3/2, clayey silt, slightly moist, stiff, low plasticity, trace roots, trace rock fragments of Monterey Shale, CL (Colluvial Soil)

③ white, 10YR8/1 to very pale brown, 10YR7/3, siltstone and shale, moderately hard, lithified, moderately bedded, stained with white calcium carbonate (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/22/20

Log of Test Pit 2

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	9

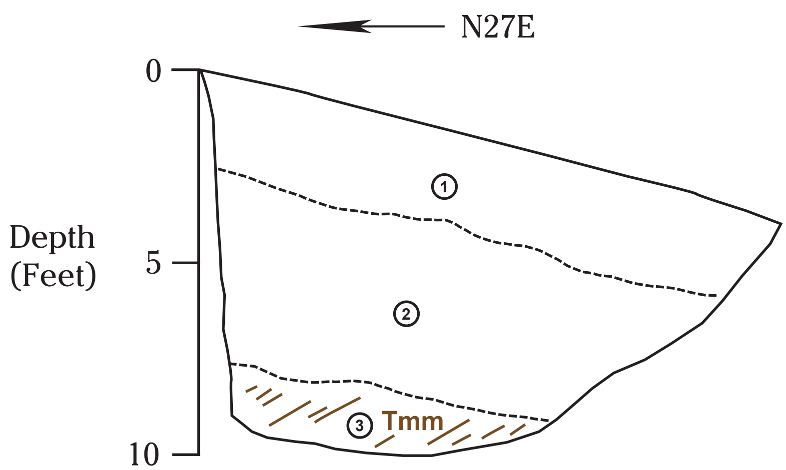
Symbols

gradational contact

relatively sharp contact

very sharp contact

N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Colluvial Soil)

② very dark grayish brown, 10YR3/2, clayey silt, slightly moist, stiff, low plasticity, trace roots, trace rock fragments of Monterey Shale to 1 inch, CL (Colluvial Soil)

③ white, 10YR8/1 to very pale brown, 10YR7/3, siltstone and shale, moderately hard, lithified, moderately bedded, stained with white calcium carbonate (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/22/20

Log of Test Pit 3

STEVEN F. CONNELLY, C.E.G.

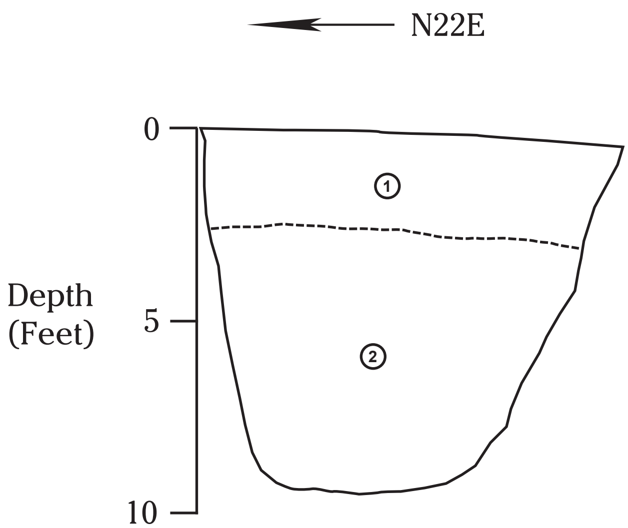
Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	10

Symbols

- - - - gradational contact
— — — relatively sharp contact
——— very sharp contact
N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Colluvial Soil)

② very dark grayish brown, 10YR3/2, clayey silt, slightly moist, stiff, low plasticity, trace roots, trace rock fragments of Monterey Shale to 1 inch, abundant fine white carbonate stringers, CL (Colluvial Soil/Slope Wash)

Logged by Steven F. Connelly, C.E.G., 12/22/20

Log of Test Pit 4

STEVEN F. CONNELLY, C.E.G.
Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	11

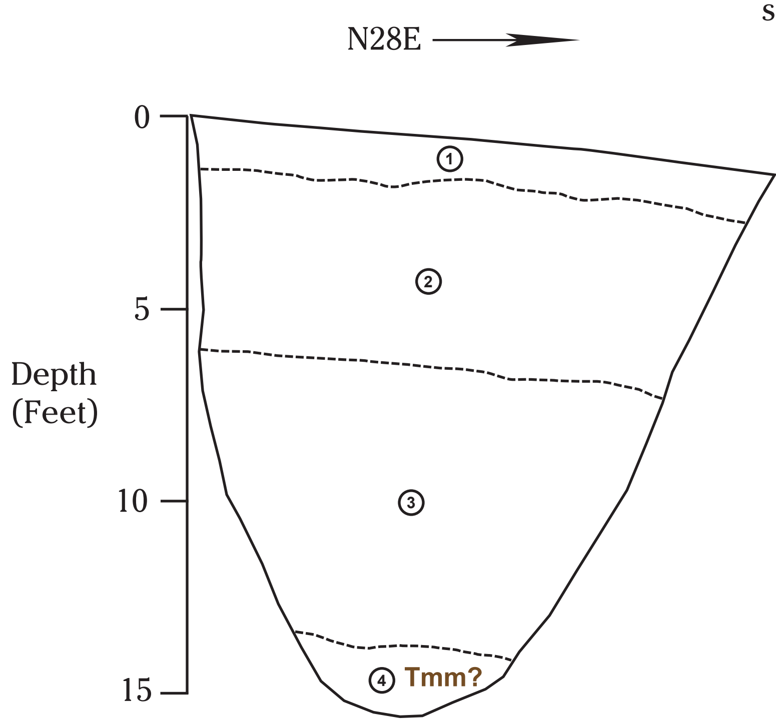
Symbols

gradational contact

relatively sharp contact

very sharp contact

N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Tilled Topsoil)

② black, 10YR2/1, silty clay, slightly moist, very stiff to hard, high plasticity, trace rock fragments of Monterey Shale to 1/2 inch (Collluvial Soil)

③ dark grayish brown, 2.5Y4/2, silty clay, slightly moist, hard to very hard, high plasticity, (Colluvial Soil/Slope Wash)

④ light yellowish brown, 2.5Y6/4, claystone, highly weathered, slightly sheared, (Highly Weathered Bedrock/Monterey Shale?)

Logged by Steven F. Connelly, C.E.G., 12/22/20

Log of Test Pit 5

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	12

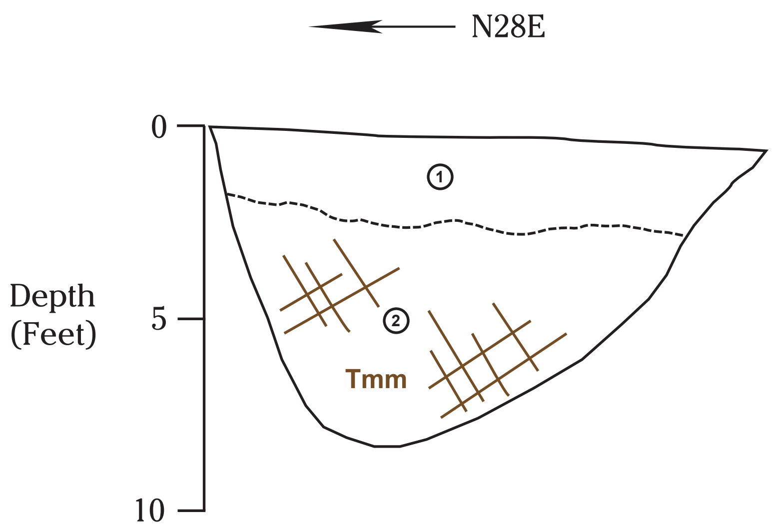
Symbols

gradational contact

relatively sharp contact

very sharp contact

N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Tilled Topsoil)

② light yellowish brown, 2.5Y6/4, siltstone, highly weathered, fractured, abundant white carbonate staining along fractures (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/22/20

Log of Test Pit 6

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	13

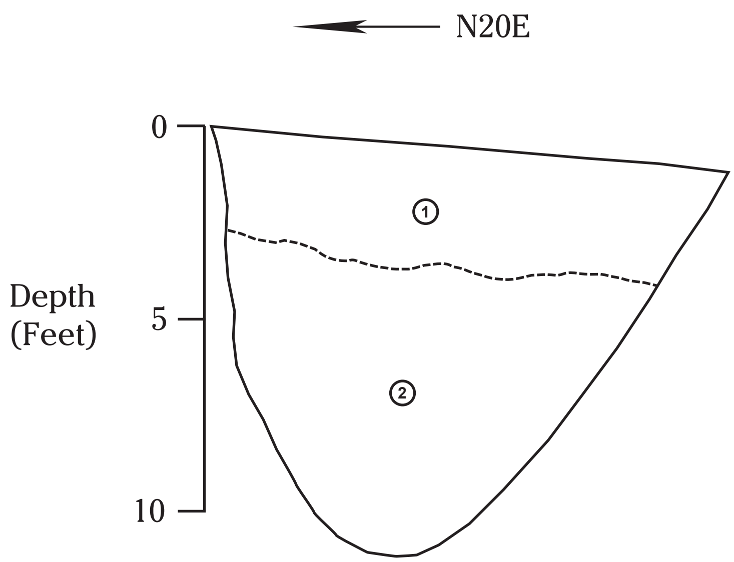
Symbols

gradational contact

relatively sharp contact

very sharp contact

N35W 9SW ▾ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Tilled Topsoil)

② very dark grayish brown, 10YR3/2, clayey silt, slightly moist, stiff, low plasticity, trace roots, trace rock fragments of Monterey Shale, CL (Colluvial Soil/Debris Flow Deposits)

Logged by Steven F. Connelly, C.E.G., 12/23/20

Log of Test Pit 7

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	14

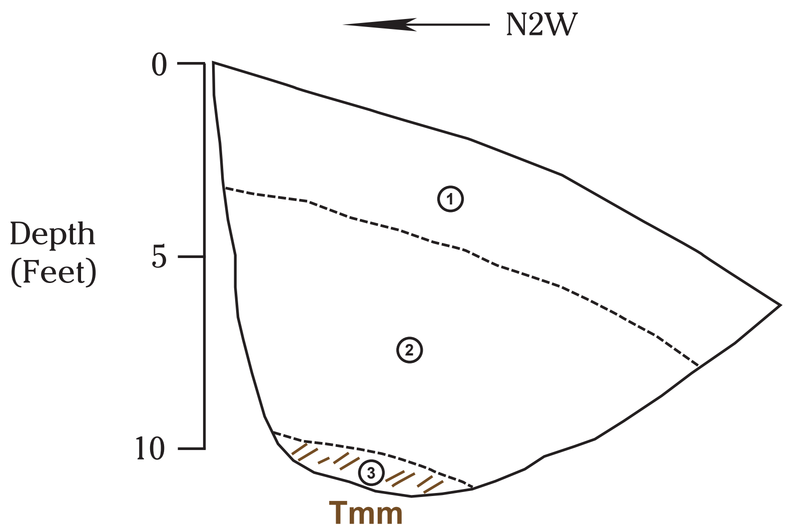
Symbols

gradational contact

relatively sharp contact

very sharp contact

N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Tilled Topsoil)

② very dark grayish brown, 10YR3/2, clayey silt, slightly moist, stiff, low plasticity, trace roots, trace rock fragments of Monterey Shale, CL (Colluvial Soil)

③ white, 10YR8/1 to very pale brown, 10YR7/3, siltstone and shale, moderately hard, lithified, moderately bedded, stained with white calcium carbonate (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/23/20

Log of Test Pit 8

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	15

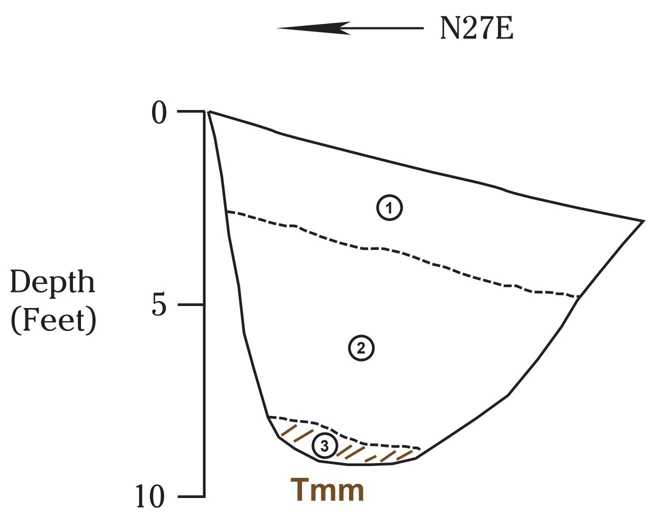
Symbols

gradational contact

relatively sharp contact

very sharp contact

N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Topsoil)

② very dark grayish brown, 10YR3/2, clayey silt, slightly moist, stiff, low plasticity, trace roots, trace rock fragments of Monterey Shale, CL (Colluvial Soil/Debris Flow Deposits)

③ white, 10YR8/1 to very pale brown, 10YR7/3, siltstone and shale, moderately hard, lithified, moderately bedded, stained with white calcium carbonate (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/23/20

Log of Test Pit 9

STEVEN F. CONNELLY, C.E.G.

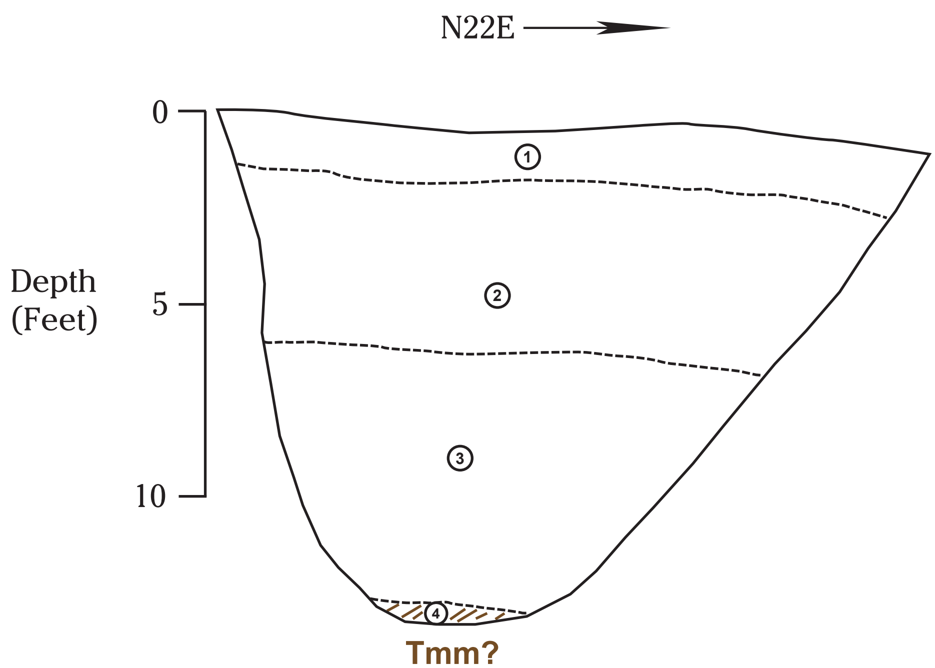
Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	16

Symbols

- gradational contact
- relatively sharp contact
- very sharp contact
- N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 10YR6/2, silty clay, slightly moist, firm to stiff, low to medium plasticity, trace roots and rootlets, CL (Tilled Topsoil)

② black, 10YR2/1, silty clay, slightly moist, very stiff to hard, high plasticity, trace rock fragments of Monterey Shale to 1/2 inch (Colluvial Soil)

③ dark grayish brown, 2.5Y4/2, silty clay, slightly moist, hard to very hard, high plasticity, (Colluvial Soil/Slope Wash)

④ light yellowish brown, 2.5Y6/4, claystone, highly weathered, slightly sheared, (Highly Weathered Bedrock, Monterey Shale?)

Logged by Steven F. Connelly, C.E.G., 12/23/20

Log of Test Pit 10

STEVEN F. CONNELLY, C.E.G.

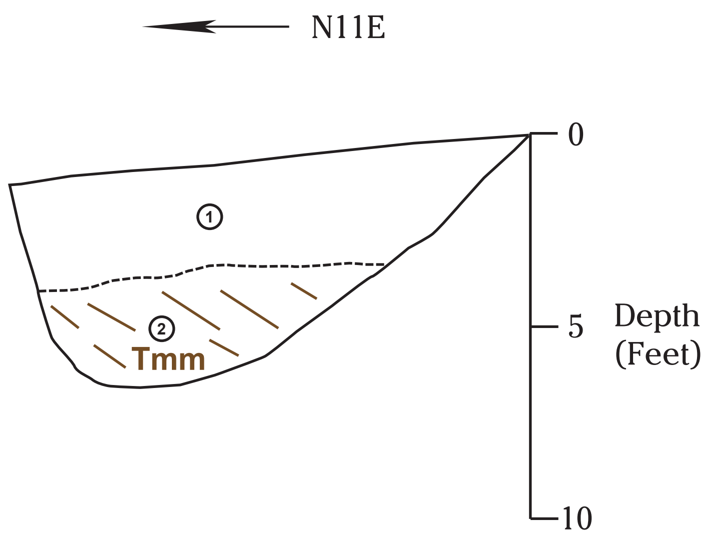
Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	17

Symbols

- gradational contact
- relatively sharp contact
- very sharp contact
- N35W 9SW ▼ strike and dip of bedding or trend and plunge of shear surface



① dark grayish brown, 2.5Y4/2, silty clay, slightly moist, hard to very hard, high plasticity (Colluvial Soil)

② white, 10YR8/1 to very pale brown, 10YR7/3, siltstone and shale, moderately hard, lithified, moderately bedded, stained with white calcium carbonate (Weathered Bedrock, Monterey Shale)

Logged by Steven F. Connelly, C.E.G., 12/23/20

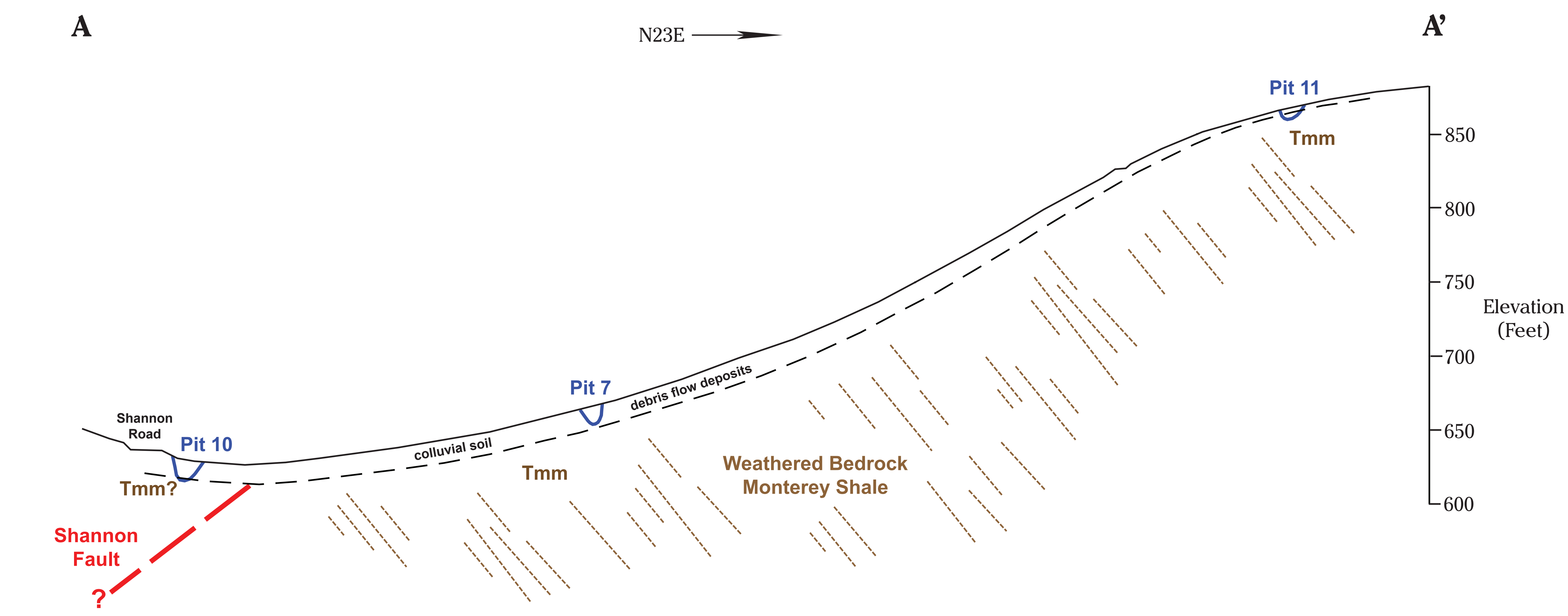
Log of Test Pit 11

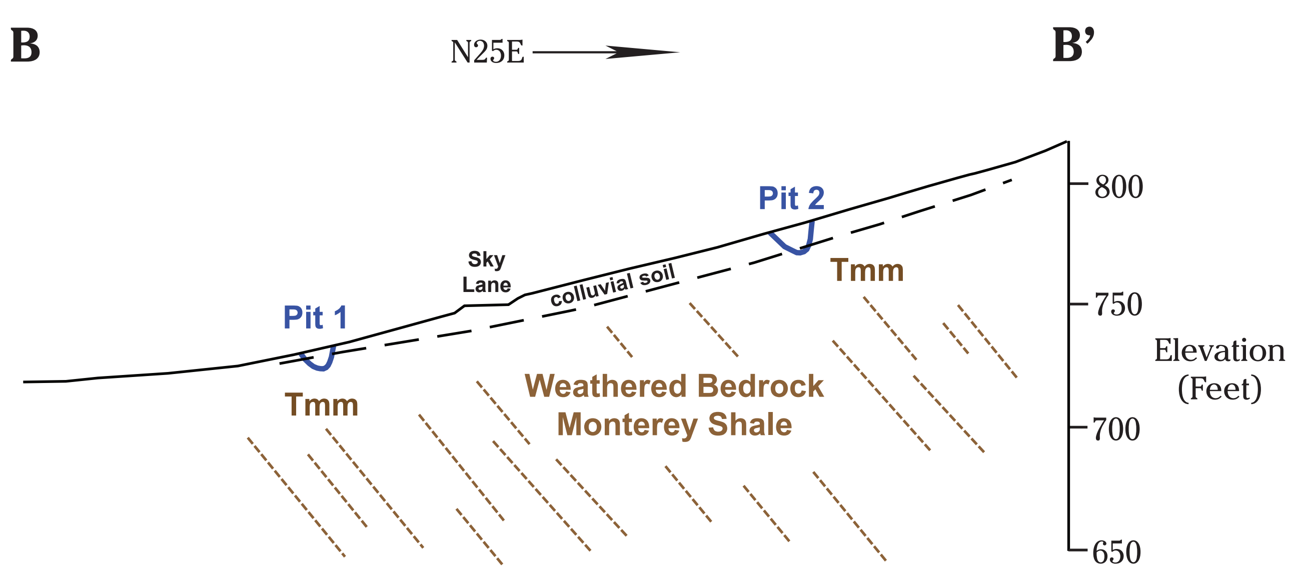
STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 5 Feet	2/5/21	18





Slope profiles based on Record Boundary by Ruth and Going, Inc., 1/31/19

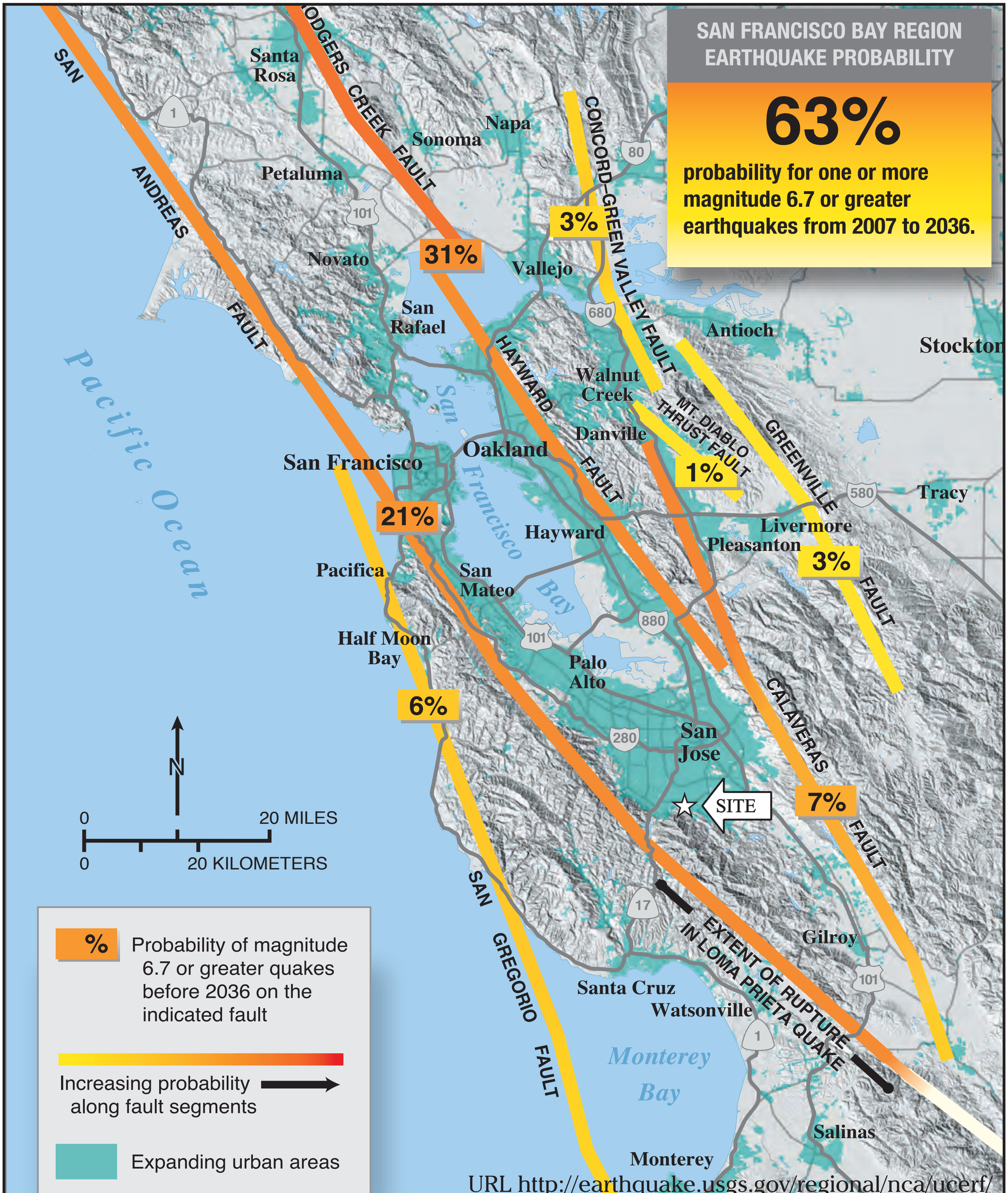
Geologic Cross-Sections

STEVEN F. CONNELLY, C.E.G.

Consulting in Engineering Geology

APN 537-27-047
14915 Shannon Road
Los Gatos, California

Project #	Scale	Date	Figure
2104	1 Inch = 80 Feet	2/5/21	19



Earthquake Probability Map	APN 537-27-047 14915 Shannon Road Los Gatos, California

STEVEN F. CONNELLY, C.E.G.
Consulting in Engineering Geology

Project #	Scale	Date	Figure
2104	As Shown	2/5/21	20